ABSTRACT

The development of information technology is very rapid enable people to exchange data and information. The more easily a person to exchange data, the greater the potential for duplication of data. Watermarking techniques to provide solutions to the problem of authenticity of digital data. Watermarking is a technique of hiding data or digital information on digital media, but it is unknown presence by human senses. Audio watermarking is one implementation of watermarking techniques to protect the copyright of multimedia. Basically the information in the form of digital legitimate stamp inserted into the audio file to keep its authenticity.

In this thesis the author designed audio watermarking with Lifting Wavelet Transform methods with M-Ary that have been optimized by the genetic algorithm to the audio file. Genetic algorithms are used to determine the quality evaluation parameters to be modified so that the watermark data still has good imperceptibility and robustness. Then to judge the quality of the audio file that has been inserted therein watermark done with some appraisal methods such as BER, SNR, ODG, MOS dan FF.

The end result of this thesis is shaped in Matlab simulation with watermarking scheme that has low BER and depress the value of the error probability against signal interference. By using this method, performasi watermarked audio has a probability of error is small. In addition, the system also showed resistance to some of the attacks were given like LPF, penambahan noise, resampling, dll.

Keyword: *audio watermarking**,** lifting wavelet transform, genetic algorithm, robustness, imperceptibility.*